species of fungi, most of which were discovered during his studies of the fungous diseases of the cranberry. Three new genera are described: *Plagiorhabdus* (2 spp.), *Bothrodiscus*, and *Acanthorhynchus*.—O. STAPF (Jour. Linn. Soc. Bot. **38**:6–17. 1907) has established a new genus (*Hallieracantha*) of Acanthaceae, to include species from Borneo and the Philippines heretofore referred to Ptyssiglottis; 19 species are recognized, 11 of which are new.—R. LAUTERBORN (Ber. Deutsch. Bot. Gesells. **25**:238–242. 1907) has described a new genus (*Thioploca*) of sulfur bacteria, belonging to the Beggiatoaceae.—J. M. C.

The male gametophyte of the podocarps.—JEFFREY and CHRYSLER[18] have been able to examine the male gametophyte of certain species of Podocarpus and Dacrydium, as well as of Agathis, obtained from New Zealand and Java, so far as material preserved in alcohol or formalin would permit. The conspicuous feature is the development of a prothallial tissue, by division of the two original prothallial cells, consisting in some cases of as many as eight cells. The walls of this tissue break down and the nuclei are freed, even from their cytoplasm, and swarm into the pollen tube. The authors do not regard this as a primitive feature, but consider the "ground plan" of this development as indicating the derivation of the podocarps and araucarians from an ancestral stock allied to the Abietineae. This feature also indicates that the podocarps and araucarians may be more nearly allied than has been supposed.—J. M. C.

Infection experiments with mildew.—REED[19] has been investigating the question of "physiological species" among the mildews. Recent work on mildews has indicated that each genus, and often each species of host plant, has its own particular specialized form. Infection experiments were conducted with twenty-three different varieties of commonly cultivated cucurbits, representing five species and three genera (Cucurbita, Cucumis, and Lagenaria). Each of these hosts was readily infected when inoculated with the conidia taken from any other. There was no difference in the infecting power of the mildew on the different species and genera, and there is no evidence of any specialization in the mildew of the Cucurbitaceae.—J. M. C.

A lycopod with a seedlike structure.—Miss BENSON[20] has investigated the reproductive structures of BERTRAND'S *Miadesmia membranacea*, a herbaceous paleozoic lycopod. The megasporangium develops a single thin-walled spore, "which in development and structure resembles an embryo sac and germinates *in situ*." The sporangium is surrounded by an integument with a small micropyle, which is surrounded by numerous long processes of the integument that "formed

[18] JEFFREY, E. C., and CHRYSLER, M. A., The microgametophyte of the Podocarpineae. Amer. Nat. **41**:355–364. *figs.* 5. 1907.

[19] REED, GEORGE M., Infection experiments with the mildew on cucurbits, *Erysiphe cichoracearum* DC. Trans. Wis. Acad. Sci. **15**:527–547. 1907.

[20] BENSON, M., *Miadesmia membranacea* Bertrand; a new paleozoic lycopod with a seed-like structure. Abstract read before Roy. Soc. London, June 13, 1907.